DOCUMENT RESUME

ED 469 139 RC 023 713

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TITLE	Collaborative Information Technology Center (CITC) for Rural Areas.
PUB DATE	2000-10-00
NOTE	6p.; Paper presented at the Annual Meeting of the National Rural Education Association (Charleston, SC, October 25-28, 2000).
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Access to Computers; *Agency Cooperation; Community Information Services; Elementary Secondary Education; Information Technology; Internet; Lifelong Learning; Public Libraries; *Rural Areas; Rural Development; Rural Schools; School Community Relationship; *Shared Resources and Services; Telecommunications
IDENTIFIERS	Access to Technology; *Broadband Cable Teleservices; *Digital Divide

ABSTRACT

The digital divide remains a formidable issue in rural areas where the only broadband access to the Internet may be at public schools or city governments. As the only locations in rural areas with adequate technological resources, schools, libraries, health facilities, and agricultural extension facilities can be places where citizens learn about technology, receive training in using technology, and meet to learn problem-solving skills. Texas Tech University is collaborating with a rural Texas county in piloting a Collaborative Information Technology Center (CITC) that will include a cyber coffee house, copy shop, telemedicine clinic, rural economic incubator, two technology classrooms, two work stations for on-site graduate research assistants, and space for a CITC manager and technical support person. Key participants include educational entities, city and county libraries, justice systems, agricultural extension service, health district, economic development entities, and significant businesses and industries. Such CITCs will facilitate lifelong learning, community health, public safety, and economic development by providing seamless interaction between rural communities and major cities and equal access to education, health, economic development, and information. (TD)

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ED 469 139

Collaborative Information Technology Center (CITC) for Rural Areas

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Presented at the Annual Conference of the National Rural Education Association (NREA)
Charleston, SC, October 2000

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RC023713

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Paper Title: Collaborative Information Technology Center (CITC) for Rural Areas

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Collaborative Information Technology Center (CITC) for Rural Areas

The National Telecommunications Information Administration, an agency of the Department of Commerce, is assessing the problem of digital deficiencies in urban and rural areas, but recognize that

It is highly unlikely that, in the foreseeable future, prices will fall to the point where most homes will have computers and Internet access. As a result, a digital divide may continue to exist at home between the information rich and the information poor. Given the great advantages accruing to those who have access, it is not economically or socially prudent to idly wait the day when most, if not all, homes can claim connectivity. Part of the short-term answer lies in providing Internet access at community access centers (CACs), such as schools, libraries, and other public access facilities [1]

Texas Tech University in collaboration with Swisher County of Texas and the county seat of Tulia is piloting a community access center by developing a Collaborative Information Technology Center (CITC). With this pilot we will assess the feasibility of developing satellite CITCs in West Texas that will directly connect to a major Collaborative Information Technology Center in Lubbock, Texas, under the auspices of Texas Tech University. CITCs have the potential of serving some rural communities and bridging the "digital divide," both a concern of state and federal agencies.

Fig.1. CITC meeting, Tulia, Texas June 2000, Swisher County (Tulia, County Seat)

School Districts, often the primary employer in rural areas, are particularly poised to serve the community needs for "Life Long Learning" and addressing the "digital divide." And in Tulia, the school district plays a significant role in providing broadband connection to its citizens. Angie Cox, Director of Technology for Tulia Independent School District, understands the need for her students and their parents to have network access on a community wide bases: "One of our goals is to network all of the downtown business," notes Ms. Cox. However, resources, training, and facilitation are needed in order to develop rural communities that serve their citizens. A Collaborative Information Technology Center (CITC) for Rural Areas can be the hub for information-technology, information access, and technological training. *A.* CITC will facilitate life long learning, community health, public safety, and economic development. Key participants include educational entities, city/county libraries, justice systems, agricultural extension service, health district, economic development entities and significant businesses and industries.

A CITC also can be a collaborative problem-solving arena for the community by providing direct access to resources at a major educational institution like Texas Tech University and to economic resources in the larger cities like Lubbock, Texas. Because public facilities generally have the technological resources available, it is possible to use established public facilities like schools, libraries, health facilities, or agricultural extension facilities as a place where citizens can learn about technology, receive training in using technology, and be a meeting place for citizens

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to learn problem solving skills. In some ways, CITCs are based on the same principal as the colonial town hall because they allow citizens the opportunity to fulfill a social need for interaction between citizens with related concerns and experiences. In other words, citizens of the community have a meeting place. But CITCs provide more than just a face-to-face meeting place to air differences and concerns; they also provide technology training and Internet access to the community, giving access to information and benefits unavailable in small rural communities, especially rural communities in the vast expanse of the southwest. Having information technology access provides more opportunity for economic development through a collaborative partnership with universities. Besides resource information in up-to-date research, universities and two- year institutions provide expertise training in the use of the technology from how to access information on the web to building web sites for the community in order to promote a quality of life not found in larger cities. The NTIA points out that

"As computer networking becomes increasingly important to economic and social success, many people in inner cities and isolated rural areas are failing to acquire the new technology as rapidly as their more affluent neighbors. Strong government polices and private initiatives are needed to ensure that they new information tools do not widen social divisions based on socioeconomic status and geography." [2]

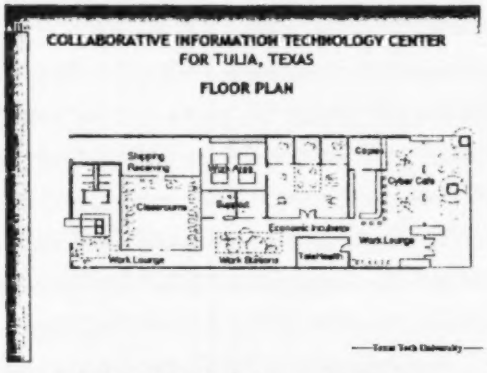

Fig. 2. Tulia CITC: Training needs: Police Department, Human Services, Prison System, Business Owners, School District (teachers and students), Assisted Living Center, Hospital District, Citizens

The CITC conceived for Tulia, includes a cyber coffee house, copy shop, TTU/HSC telemedician clinic, rural economic incubator, two technology classrooms, two, work stations for on-site graduate research assistants, and space for a CITC manager and technical support person

One of the most vital resources a small community can get from a research institution is suggestion for economic development. As Bob McComb, Director of Texas Tech University Small Business Development Center, points out, "Rural Economic Incubators can be connected to the University Based, Small Business development Center. The rural incubators can share one manager in lieu of the expense of individual managers." At the same time, universities fulfill community involvement requirements and add to their body of knowledge concerning life in rural communities. In fact, CITCs for Rural Areas are conceived as satellites of a larger cog of a university based CITC, allowing the university to realize its potential as an information resource for other universities and other communities.

"Locational Choice," a buzzword of the new millennium, signifies the importance of quality of life, and having the freedom to choose location that accentuates that quality. There is a resurgence of reclaiming the inner-cities from crime and corruption, but there is also a desire to get back to the 40s and 50s ideal of quiet communities where life is far less hectic than an hour drive home five days a week. Rural communities are a natural selection of Locational Choice. However, very few people can opt to live as Thoreau on Walden Pond. Being "connected" to the Internet allows people a choice on where they live. But without adequate broadband connection, rural communities have no way of offering the same kind of access to the Internet. If broadband Internet access is not available, it is very unlikely that communities will be able to attract people looking for "location choice" and they will find it more and more difficulty to keep young people in the community from leaving. In 1988, the American Institute of Architects was aware of the search for high-quality life in rural areas:

Moderate, sustained growth will occur in the hinterlands of major metropolitan areas and in many regional cities and towns that, while small, offer a high 'quality of life.' [3]

Rural communities simply cannot afford to have separate technology rich facilities for education, health, agriculture, business, tourism, and industry. Collaboration implies shared facilities and staff. Rural communities are often rich in "vacant or underused" buildings, especially those downtown, which are ideal for centers. However, bringing any existing facility into the 21st century with wiring for information technology capabilities is expensive. By working together research institutions, major cities, and rural communities can accomplish what the individual entities cannot. By working together, CITCs can provide a seamless interaction between the rural communities and the major cities and provide equal access to education, health, economic development, and information to build global community or life-long learners. The need for access to health information and high-quality health resources in rural America can be addressed by a CITC because, as Patti Patterson notes, Director of Community Health, TTU Health Sciences Center, *"The CITIC will allow the TTU/Health Science Center to support Medical Residents in the Rural Areas. Residents tend to locate their practices within 150 miles of the location of their residency."*

For education, a CITC can provide resources to students as well as teachers because every child will have access to the same information as those living in urban communities. Louise Allen, Assistant Professor, TTU, College of Education sees how CITCs can benefit teacher education: *"Rural based CITI will provide the College of Education the ability to support our student teachers. Our student teachers are located in areas served by different Regional Education Service Centers."*

Closing the Digital Divide

In an 1998 assessment, the Federal Communication Commission [FCC] *"identified the following groups as being particularly vulnerable of not having access to advanced services if deployment is left to market forces alone: 1) rural Americans, particularly those outside of population centers; 2) inner city consumers; 3) low-income consumers; 4) minority consumers; and 5) tribal areas.* [4]

In a time when technology is becoming accessible to everyone from children in public schools to senior citizens living in retirement centers, the "digital divide" remains a formidable issue for those in rural areas where broadband Internet access is often at the public school system or, at best, city governments. This leaves those who can only access the Internet through phone lines at a disadvantage because of cost or access to ISP (Internet Service Providers); this digital deficiency is most evident in rural America. Although the argument is valid, that people in rural areas have phones, therefore they have access to the Internet and all the information and resources that provides, in reality this access is far below what is accessible to people living in more urban communities like Lubbock, Texas. The misconception is that if rural communities have phone and have access, they have the same resources as those in urban communities, but access is not the only part of the deficiency.

The deficiency goes beyond access. Training citizens in rural communities how to use the Internet and its resources, as well as other computer software, to better facilitate their own resources will show them how to share their knowledge and experiences. By providing broad-band connection to the internet a potential exists to draw people who need broad-band connection in order to conduct business on-line to diminishing small rural communities. In order to maintain the quality of life that is sought by people in the rural communities as well as those who seek the ideal of living out of the "rat-race" of urban areas and to escape what many call "urban blight," Internet access is vital for health, economic, and social sustainability and growth. CITCs can provide broadband connection. And probably, most importantly CITCs can provide students the same access to educational resources as those who live in urban communities, an issue that should be the focus of citizens and legislatures everywhere.

Industry's need for technology-trained workforce continues to grow at an unprecedented rate. In West Texas the gape between the number of trained technology users and the number of jobs requiring trained technology users continues to grow wider and wider. Workforce training at two-year institutions is one of the fastest growing areas, and training programs like Microsoft certification are filling up faster than the institutions can hire people to staff them. CITCs can provide a center for workforce training while at the same time providing connection to companies seeking trained technological workers.

Policies are already in place to address the have-nots in the Digital Divide: "*The Digital*

Divide Network (DDN) tackles the growing gap between those who have access to technology and information skills and those who do not through a powerful knowledge network" [5] Quality of life for every citizen independent of where they live is community responsibility. Collaborative Information Technology Centers in rural communities will provide fast broadband connection between the small communities of West Texas and Texas Tech University and Lubbock.

Getting broadband access to rural communities is one of the first steps, and this can be accomplished through public institutions that for the most part already have broadband access, and with wireless communication, which can be considerably less costly for rural communities. The FCC notes that their findings

".. suggest that further competition and price reductions will be vital to making information tools affordable for most Americans. Going forward, it will be important to promote policies that directly enhance competition among companies manufacturing computers and other Internet devices, as well as among Internet service providers. Expanding competition in rural areas and central cities is particularly significant, as these areas lag behind the national averages for PC-ownership and household Internet access.
At the same time, the data demonstrate the need for continued universal service support for telephony, particularly in rural and other high-cost areas. And we need to encourage the build out of broadband networks to rural and other underserved areas of our nation, so that all Americans can take full advantage of new information technologies and services. [6]

Crossing the "digital divide" and bridging the gap between the technological have and have-nots means institutions the size of Texas Tech University and cities like Lubbock must collaborate to find resources for those who are on the other side of the divide and those who suffer from digital deficiencies. By providing Collaborative Information Technology Centers in communities like Tulia, Texas Tech University is in one way fulfilling its obligation to provide resources and education to its community, and by addressing the issue of the digital divide head one before the have-nots in the rural communities grows larger.

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